

REMARKS/ARGUMENTS

New Claim 56 is supported by Claim 54. New Claims 57 and 58 are supported by, e.g., Example 2A at specification pages 17-18 and Example 4B at specification page 21. New Claims 59-68 are similarly supported. See also the paragraph bridging specification pages 9-10 and cancelled Claim 31. No new matter has been added.

Claims 29, 30, and 41-58 have been focused on the newly discovered crystalline form of imido-alkanpercarboxylic acids, termed "alpha" herein. This new crystalline form spontaneously transforms into the known beta form upon, e.g., suspension in water, where the beta form crystals produced have an advantageous particle size. See, e.g., specification page 1, second paragraph:

More specifically the invention relates to a new crystalline form of imido-alkanpercarboxylic acids, stable at the solid state but when suspended in water, it is spontaneously transformed into crystals of various crystalline form, stable in aqueous medium and having an average particle size lower than 30 micron, preferably lower than 8 micron, in particular lower than or equal to 2 micron. The imido-alkanpercarboxylic acids obtained with said sizes have a higher bleaching efficacy, the concentration being equal, with respect to those having sizes higher than 30 micron and furthermore they can be formulated in dispersions, for example aqueous, for industrial and commercial applications by using reduced amounts of chemical additive agents, in particular suspending agents, with respect to those requested by the prior art.

Claim 29 requires this new alpha form, and includes spectral X-ray image information on the alpha form:

Claim 29. An imido-alkanpercarboxylic acid represented by formula (I):

wherein said imido-alkanpercarboxylic acid is in a crystalline form of alpha that is stable at storage at the solid state, but when dispersed in water is capable of being transformed into one or more crystals of beta crystalline form that are stable in aqueous environment,
wherein said one or more crystals of beta crystalline form have an average size of lower than 30 microns,
and wherein the respective spectra of the alpha crystalline form obtained by X-ray Diffraction and Surface Infrared Spectroscopy techniques show, with respect to the spectra of the beta form of the same peracid, exhibit a different spectral X-ray image and a typical absorption shift in the 1697-

1707 cm⁻¹ zone by Surface Infrared Spectroscopy towards higher frequencies, of the order of 10 cm⁻¹.

This new form, alpha, is nowhere disclosed in either Venturello or Suzuki. Rather, there references relate to the prior art beta form of imido-alkanpercarboxylic acids as prepared by, e.g., recrystallization. See specification pages 3-7 and, e.g., the Examples of Venturello beginning at col. 3 of the reference. These prior art beta forms are to be contrasted with the novel alpha forms claimed herein, made for example by quenching a melted organic phase of the imido-alkanpercarboxylic acid.¹

Accordingly, and as new crystalline forms are patentable generally,² and because the references applied against the claims do not disclose or suggest this new form, Applicants respectfully requests the reconsideration and withdrawal of the rejections of Claims 29, 30, and 41-58 over Venturello and Suzuki.

Similarly, and with regard to Claims 59-68, the beta form of the imido-alkanpercarboxylic acid crystals produced from the novel alpha form are both new and nonobvious. For example, the size of these particles is unmatched in the prior art, as is their performance in, e.g. suspension, requiring significantly reduced amounts of suspending agent to remain suspended. See, e.g., specification page 10, third full paragraph:

As said, the beta form crystals are stable both in aqueous dispersion and at the solid state. It has been surprisingly and unexpectedly found by the Applicant that the crystals in beta form, having the above sizes, can be formulated even in aqueous phase using very reduced amounts of suspending agents, even less than 1/5 by weight with respect to those used

¹ See, e.g., specification page 13 and Claim 41. As process Claim 41 depends from allowable product Claim 29, Claim 41 and its dependent claims should be rejoined and allowed along with Claim 29. See MPEP 821.04(b) and *In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995).

² In both factual and legal point is *In re Cofer*, 148 USPQ 268, 271 (CCPA 1966), wherein the court held that a new crystalline form of a compound would not have been obvious absent evidence that “ the prior art suggests the particular structure or form of the compound or composition as well as suitable methods for obtaining that structure of form.” See *In re Certain Crystalline Cefadroxil Monohydrate*, 15 USPQ2d 1263 (ITC 1990).

to prepare the commercial compositions having an aqueous base containing imido-alkanpercarboxylic acids obtained by the milling techniques of the prior art.

Clearly, these beta form crystals of the defined size area patentable over Venturello and Suzuki in view of their novelty and these surprising and unexpected benefits.

Finally, and with regard to the double patenting rejection, these rejections are traversed. In addition, as these are the only remaining rejections this case should be passed to Issue and the double patenting rejections made in the copending applications where appropriate.

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